

**IN THE CLAIMS:**

*This listing of claims will replace all prior versions and listings of claims in the application*

**Listing of Claims:**

*Claims 1-24 (Cancelled)*

25. (New) A manufacturing method for an infrared detection device including a thermal resistance element in which a thermal resistor substance whose resistance changes according to temperature contacts an electrode, the manufacturing method comprising:

an electrode formation step of forming the electrode in a predetermined shape on a substrate; and

a growth step of selectively growing the thermal resistor substance on only the electrode.

26. (New) A manufacturing method for an infrared detection device including a thermal resistance element in which a thermal resistor substance whose resistance changes according to temperature contacts an electrode, the manufacturing method comprising:

an electrode formation step of forming the electrode on a semiconductor substrate;

a thin film formation step of forming a thin film on the electrode;

a thin film removal step of removing a portion of the thin film to expose the electrode;

a growth step of growing the thermal resistor substance on the exposed electrode; and

a step of forming a conductive film on the thin film and on the thermal resistor substance.

27. (New) The manufacturing method of claim 25, wherein

the growth step selectively grows the thermal resistor substance on only the electrode by a vapor growth method.

28. (New) The manufacturing method of claim 26, wherein

the growth step selectively grows the thermal resistor substance on only the electrode by a vapor growth method.

29. (New) The manufacturing method of claim 27, wherein  
the vapor growth method is a metal-organic chemical vapor deposition method.
30. (New) The manufacturing method of claim 28, wherein  
the vapor growth method is a metal-organic chemical vapor deposition method.
31. (New) The manufacturing method of claim 27, wherein the growth step includes:  
a vaporization step of vaporizing a composition material of the thermal resistor substance into a gaseous material;  
an ion clusterization step of ion clusterizing the gaseous material;  
a collection step of collecting the ion clusterized gaseous material on the electrode by giving the electrode a predetermined electric potential to generate an electric field; and  
a condensation step of causing the ion clusterized gaseous material to condense on the electrode by heating the electrode to a predetermined temperature, to grow the thermal resistor substance.
32. (New) The manufacturing method of claim 28, wherein the growth step includes:  
a vaporization step of vaporizing a composition material of the thermal resistor substance into a gaseous material;  
an ion clusterization step of ion clusterizing the gaseous material;  
a collection step of collecting the ion clusterized gaseous material on the electrode by giving the electrode a predetermined electric potential to generate an electric field; and  
a condensation step of causing the ion clusterized gaseous material to condense on the electrode by heating the electrode to a predetermined temperature, to grow the thermal resistor substance.
33. (New) The manufacturing method of claim 25, wherein  
the growth step selectively grows the thermal resistor substance on only the electrode by a liquid-phase growth method.

34. (New) The manufacturing method of claim 26, wherein  
the growth step selectively grows the thermal resistor substance on only the electrode by  
a liquid-phase growth method.
35. (New) The manufacturing method of claim 33, wherein  
the liquid-phase growth method is an electrophoresis method.
36. (New) The manufacturing method of claim 34, wherein  
the liquid-phase growth method is an electrophoresis method.
37. (New) The manufacturing method of claim 33, wherein the growth step includes:  
a colloidization step of colloidizing a composition material of the thermal resistor  
substance into colloid particles;  
a suspension generation step of generating a suspension including the colloid particles;  
an electric field generation step of, with the semiconductor substrate being immersed in  
the suspension, applying a predetermined voltage to the electrode to generate an electric field;  
and  
an aggregation step of causing the colloid particles to aggregate on the electrode by an  
action of the electric field, to grow the thermal resistor substance.
38. (New) The manufacturing method of claim 34, wherein the growth step includes:  
a colloidization step of colloidizing a composition material of the thermal resistor  
substance into colloid particles;  
a suspension generation step of generating a suspension including the colloid particles;  
an electric field generation step of, with the semiconductor substrate being immersed in  
the suspension, applying a predetermined voltage to the electrode to generate an electric field;  
and  
an aggregation step of causing the colloid particles to aggregate on the electrode by an  
action of the electric field, to grow the thermal resistor substance.

39. (New) The manufacturing method of claim 25, wherein  
a crystal lattice constant of the electrode, along an interface with the thermal resistor substance, is substantially equal to a crystal lattice constant of the thermal resistor substance.
40. (New) The manufacturing method of claim 26, wherein  
a crystal lattice constant of the electrode, along an interface with the thermal resistor substance, is substantially equal to a crystal lattice constant of the thermal resistor substance.
41. (New) The manufacturing method of claim 25, wherein  
a material of the thermal resistor substance is a strongly correlated electron material expressed by a general formula  $\text{Pr}_x\text{Ca}_{1-x}\text{MnO}_3$ , to which a metal oxide, having a perovskite structure and including an alkaline-earth metal or a rare-earth metal, has been added.
42. (New) The manufacturing method of claim 26, wherein  
a material of the thermal resistor substance is a strongly correlated electron material expressed by a general formula  $\text{Pr}_x\text{Ca}_{1-x}\text{MnO}_3$ , to which a metal oxide, having a perovskite structure and including an alkaline-earth metal or a rare-earth metal, has been added.
43. (New) The manufacturing method of claim 26, wherein  
the thin film is an insulation film.
44. (New) The manufacturing method of claim 25, wherein  
the thermal resistor substance is a single crystal.
45. (New) The manufacturing method of claim 26, wherein  
the thermal resistor substance is a single crystal.
46. (New) An infrared detection device including a thermal resistance element in which a thermal resistor substance whose resistance changes according to temperature contacts an electrode, wherein

the thermal resistor substance has been selectively formed on only the electrode that was formed on a substrate.

47. (New) The infrared detection device of claim 46, wherein

a crystal lattice constant of the electrode, along an interface with the thermal resistor substance, is substantially equal to a crystal lattice constant of the thermal resistor substance.

48. (New) The infrared detection device of claim 46, wherein

a material of the thermal resistor substance is a strongly correlated electron material expressed by a general formula  $\text{Pr}_x\text{Ca}_{1-x}\text{MnO}_3$ , to which a metal oxide, having a perovskite structure and including an alkaline-earth metal or a rare-earth metal, has been added.

49. (New) The infrared detection device of claim 46, wherein

the thermal resistor substance is a single crystal.